translated from the Hebrew into Latin during his lifetime by Plato of Tivoli, under the title *Liber Embadorum.* This work, together with that of which we have been speaking above, was used by Leonardo da Pisa as the foundation for his text-books on Indian arithmetic, geometry and trigonometry, on which the whole of mediaeval mathematical studies were based. It is upon them, ultimately, that the technical progress and the material civilisation of the present day depend.

§n

In the blundering progress of scientific and technical achievement in the Middle Ages, the Jews of Europe did not fail to play their part. Throughout the period one finds mention of them—now translating a fundamental scientific work, now introducing a new process from one country to another, now referred to as authorities, now making their original contributions.

An impressive list of Jewish inventors and scientists of the Middle Ages could be compiled. Many of them have been mentioned above, in connexion with the evolution of various nautical instruments and tables. But their interests were not by any means confined to this. The fourteenth-century philosopher Levi ben Gershom, inventor of the so-called "Jacob's Staff" *(supra,* p. 66), is distinguished in the history of science also as discoverer of the *Camera Obscura,* of which he gave a detailed description, many generations before Alberti and Delia Porta, in a mathematical work

soon translated into Latin. (His interest was of course dependent on the fact that the device could be used for astronomical observation.) The importance of this become apparent when it is realised that on this simple idea depends the whole of photography and cinematography as we know